

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

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1. AGENCY USE ONLY (Leave blank)	2. REPORT DATE	3. REPORT TYPE AND DATES COVERED	
	3 March 1995		
4. TITLE AND SUBTITLE A Review of the Relationship between Tobacco Use and Musculoskeletal Injury			5. FUNDING NUMBERS
6. AUTHOR(S) Amoroso, P.J., Reynolds, K.L., and Dettori, J.R.			
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) U.S. Army Research Institute of Environmental Medicine Natick, MA 01760-5007		8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)		10. SPONSORING/MONITORING	
19960419 087			
11. SUPPLEMENTARY NOTES Abstract presented at Third International Conference on Injury Prevention and Control, 18-22 Feb 1996, Melbourne, Australia			
12a. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release; distribution is unlimited		12b. DISTRIBUTION CODE	
13. ABSTRACT (Maximum 200 words) PURPOSE: To review the relationship between smoking and musculoskeletal injury and discuss hypotheses for the mechanism of tobacco's influence on the risk of physical injury. BACKGROUND: The role of tobacco in the morbidity and mortality from cardiovascular disease, cancer, and other disorders is well documented. Smokers have been shown to have impaired healing of wounds and fractures, as well as chronic demineralization of bone resulting in susceptibility to fractures. Recent studies have shown higher musculoskeletal injury rates among smokers in the U.S. Army. Smoking has been shown to be a significant risk factor for occupational injuries among postal workers, and for back injuries among other workers. DISCUSSION: The use of tobacco products is associated with a constellation of physiological and psychosocial factors which are capable of interacting to alter injury risk. These factors can be divided into two general categories: those that result in increased exposure to hazards and those that result in increased susceptibility to injury for any given hazard. Exposure to hazards is influenced by (truncated after 200 words)			
14. SUBJECT TERMS fracture, back pain, osteoporosis, musculoskeletal injury, tobacco, nicotine, accident, carbon monoxide, behavior, risk-taking, wound		15. NUMBER OF PAGES 1 16. PRICE CODE	
17. SECURITY CLASSIFICATION OF REPORT Unclassified	18. SECURITY CLASSIFICATION OF THIS PAGE Unclassified	19. SECURITY CLASSIFICATION OF ABSTRACT Unclassified	20. LIMITATION OF ABSTRACT UL

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A Review of the Relationship between Tobacco Use and Musculoskeletal Injury

2. Authors: Amoroso, PJ, Reynolds, KL, and Dettori, JR

3. Type of Document: Abstract Poster Presentation Book Chapter
 Journal Article Technical Report Review Article

4. Proposed journal or publication: _____

5. Meeting name, dates & location: Third International Conference on Injury

Prevention and Control, 18-22 Feb 96, Melbourne, Australia

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10. STO/Task number WB **Budget Project No.** 3MA62787,4879 **Cost Code** 5433285705700

11. USARIEM Clearance Number P95-58 (Abs) **by RPOD** 6 Mar 95 **(Date)**

517 - Wednesday Oral Bh

Presenter: Amoroso, Paul

**A REVIEW OF THE RELATIONSHIP BETWEEN
TOBACCO USE AND MUSCULOSKELETAL INJURY**

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PURPOSE: To review the relationship between smoking and musculoskeletal injury and discuss hypotheses for the mechanism of tobacco's influence on the risk of physical injury.

BACKGROUND: The role of tobacco in the morbidity and mortality from cardiovascular disease, cancer, and other disorders is well documented. Smokers have been shown to have impaired healing of wounds and fractures, as well as chronic demineralization of bone resulting in susceptibility to fractures. Recent studies have shown higher musculoskeletal injury rates among smokers in the U.S. Army. Smoking has been shown to be a significant risk factor for occupational injuries among postal workers, and for back injuries among other workers.

DISCUSSION: The use of tobacco products is associated with a constellation of physiological and psychosocial factors which are capable of interacting to alter injury risk. These factors can be divided into two general categories: those that result in increased exposure to hazards and those that result in increased susceptibility to injury for any given hazard. Exposure to hazards is influenced by personality factors such as risk-taking behavior, and the propensity for the use or abuse of drugs and alcohol. Use of tobacco products may also reduce one's ability to appropriately recognize or react to hazards. Examples include decreased concentration ability resulting from nicotine withdrawal or decreased night vision resulting from elevated serum carbon monoxide levels. Physiological factors, acting at the tissue level, may be responsible for increased susceptibility to injury. Smokers may be at higher risk for "overuse injuries" due to a compromised ability to repair damaged tissues. For example, elevated carbon monoxide levels compromise tissue oxygen delivery. Also, nicotine causes vasoconstriction, inhibition of revascularization after injury, and may inhibit osteoblast activity. Smoking is also believed to lead to some vitamin deficiencies which may allow tissue damage by free radical formation or to impaired collagen synthesis.

CONCLUSIONS: Sufficient evidence exists to suggest that tobacco may have a primary and independent role in injury causation. The implications of this finding are profound. Uncovering the mechanism of this relationship may yield tools for preventing injuries among smokers or for making non-smokers less susceptible to injury.